**FIG. 1**

																	←→ write areas (wa = 1)		spare bit
																			spare bit
																			spare bit
Bit Positions i:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Old data $d_i$ :	1	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0			
Coded data $b_i$ :	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0			
reads:	R	-	-	-	-	R	-	R	R	-	R	R	-	R	R	-			
writes:	-	W	W	W	W	-	W	-	-	W	-	-	W	-	-	W	W		

write results

i=1:	0	1	0	0	0	1	0	0	0	1	0	1	0	0	1	0		
i=2:	0	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0		
i=3:	0	0	0	1	0	1	0	0	0	1	0	1	0	0	1	0		
i=4:	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0		
i=6:	0	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0		
i=9:	0	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0		
i=12:	0	0	0	0	1	0	1	0	0	1	0	0	1	0	1	0		
i=15:	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	1		
i=16:	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	1	

**FIG. 3**

## REPLACEMENT SHEET

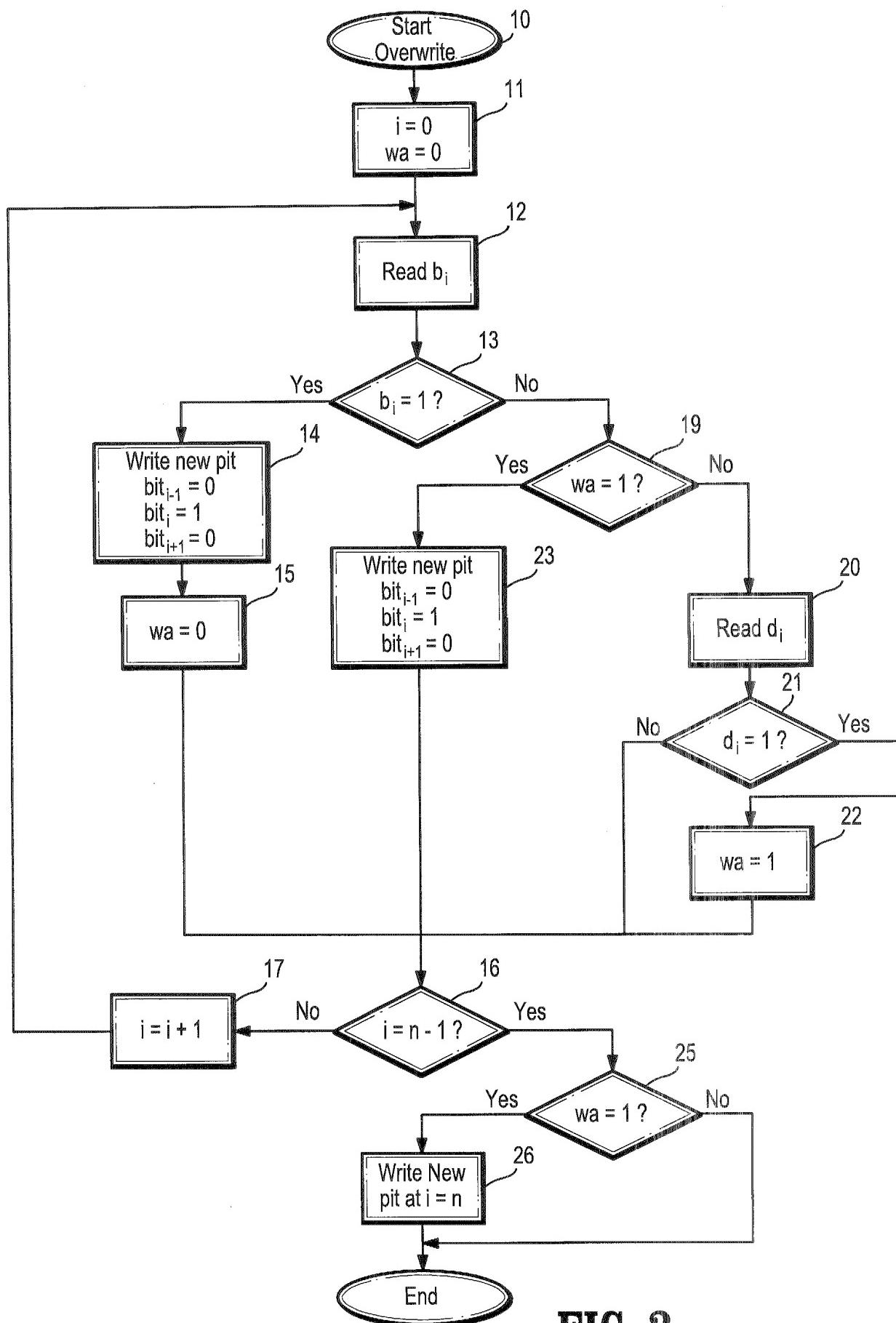
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FIG. 2

REPLACEMENT SHEET

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Bit Positions i:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Old data $d_i$ :	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0
Coded data $b_i$ :	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0
reads:	R	-	-	-	-	-	-	R	-	-	R	-	-	R	-	-
writes:	-	W	W	W	W	-	W	-	-	W	-	-	W	-	-	W

FIG. 4

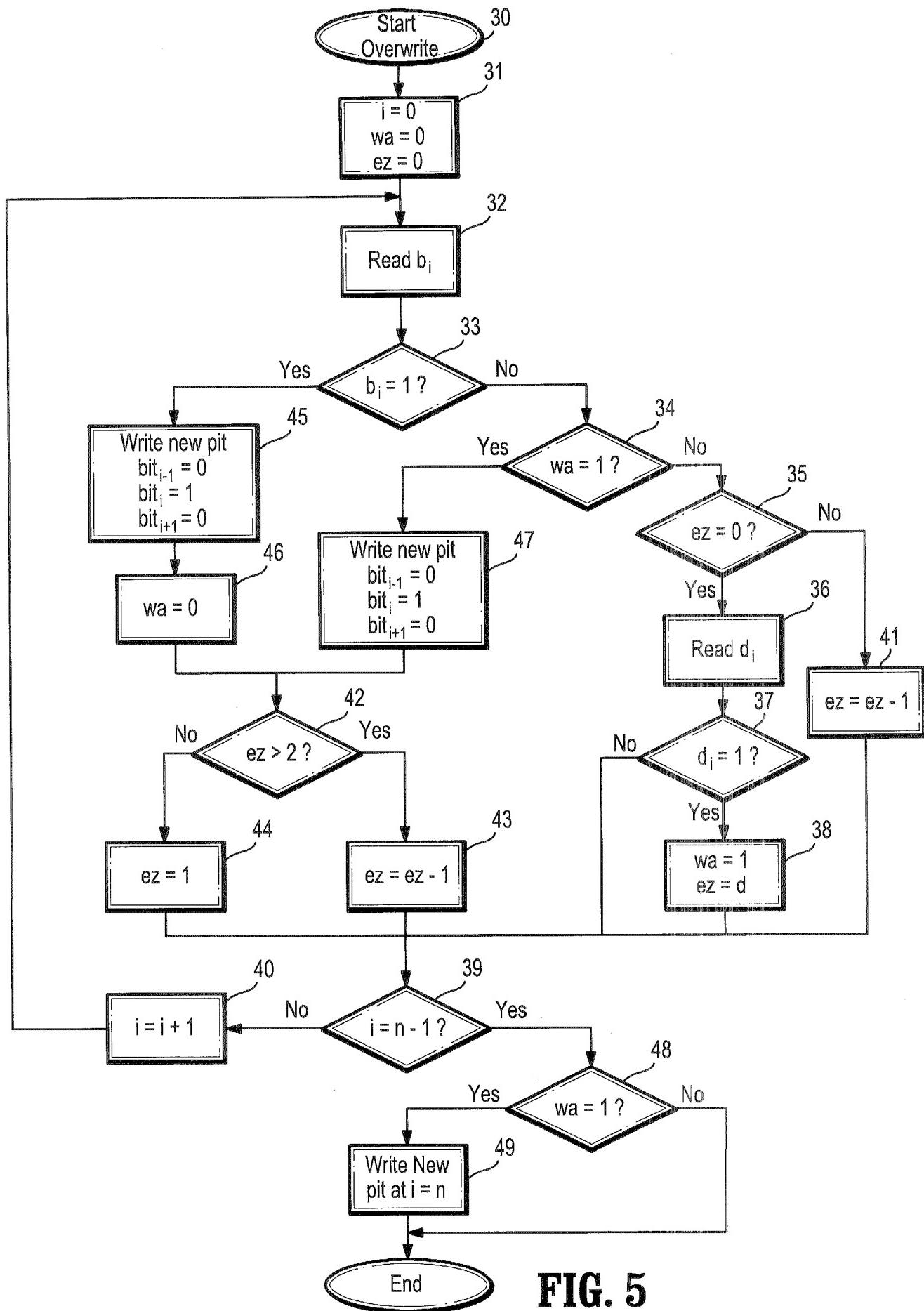
Bit Positions i:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Old data $d_i$ :	1	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0
Coded data $b_i$ :	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0
reads:	R	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-
writes:	-	W	W	W	W	-	W	-	-	W	-	-	W	-	-	W

FIG. 6

REPLACEMENT SHEET

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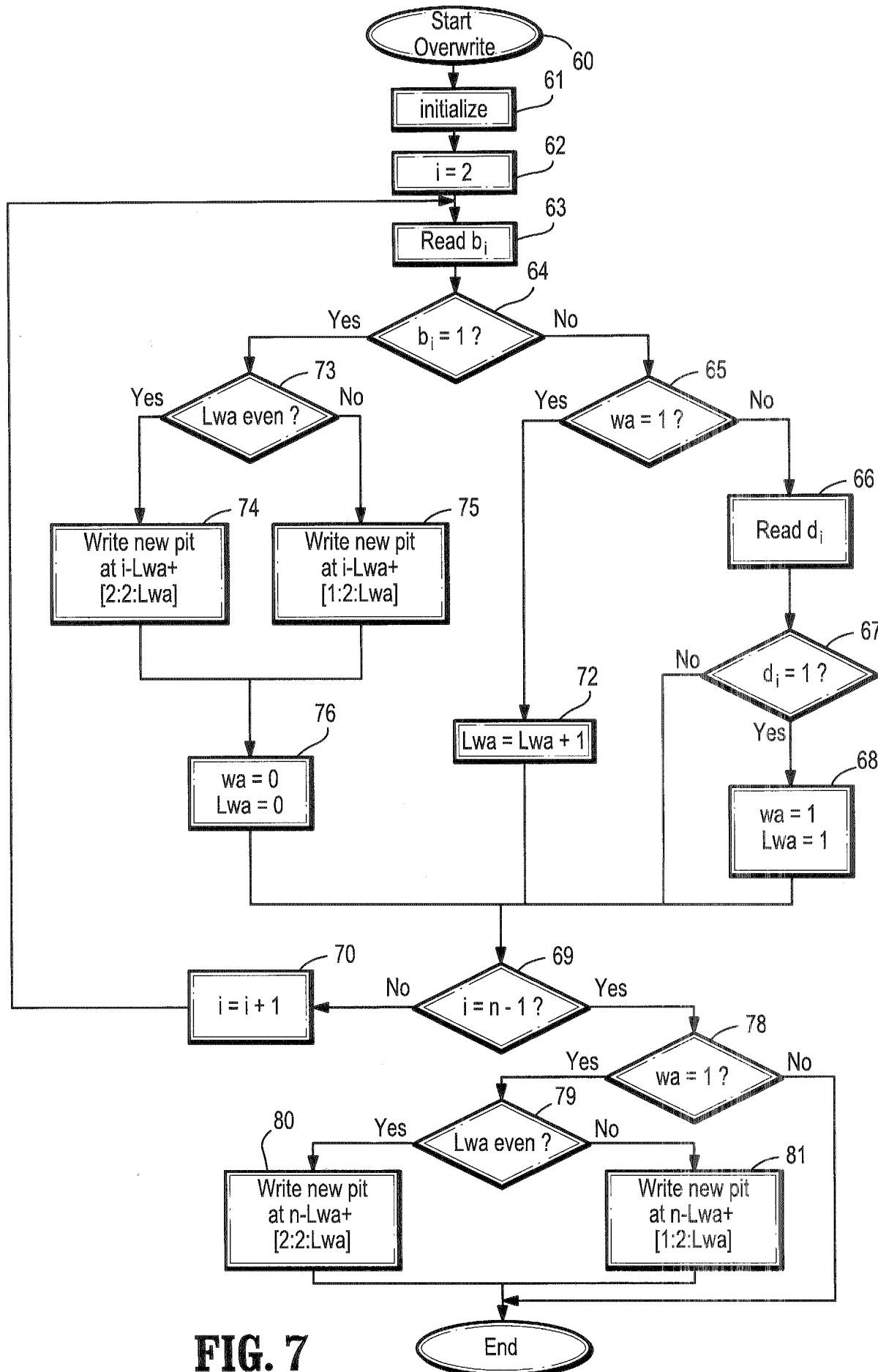


**FIG. 5**

## REPLACEMENT SHEET

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## **FIG. 7**

↔ write areas  
(wa = 1)

Bit Positions i:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Old data d <sub>i</sub> :	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	
Coded data b <sub>i</sub> :	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	
reads:	R	-	-	-	-	-	R	R	R	-	R	R	-	R	R	R	
writes:	-	W	-	W	-	W	-	-	-	W	-	-	W	-	-	-	W

write results

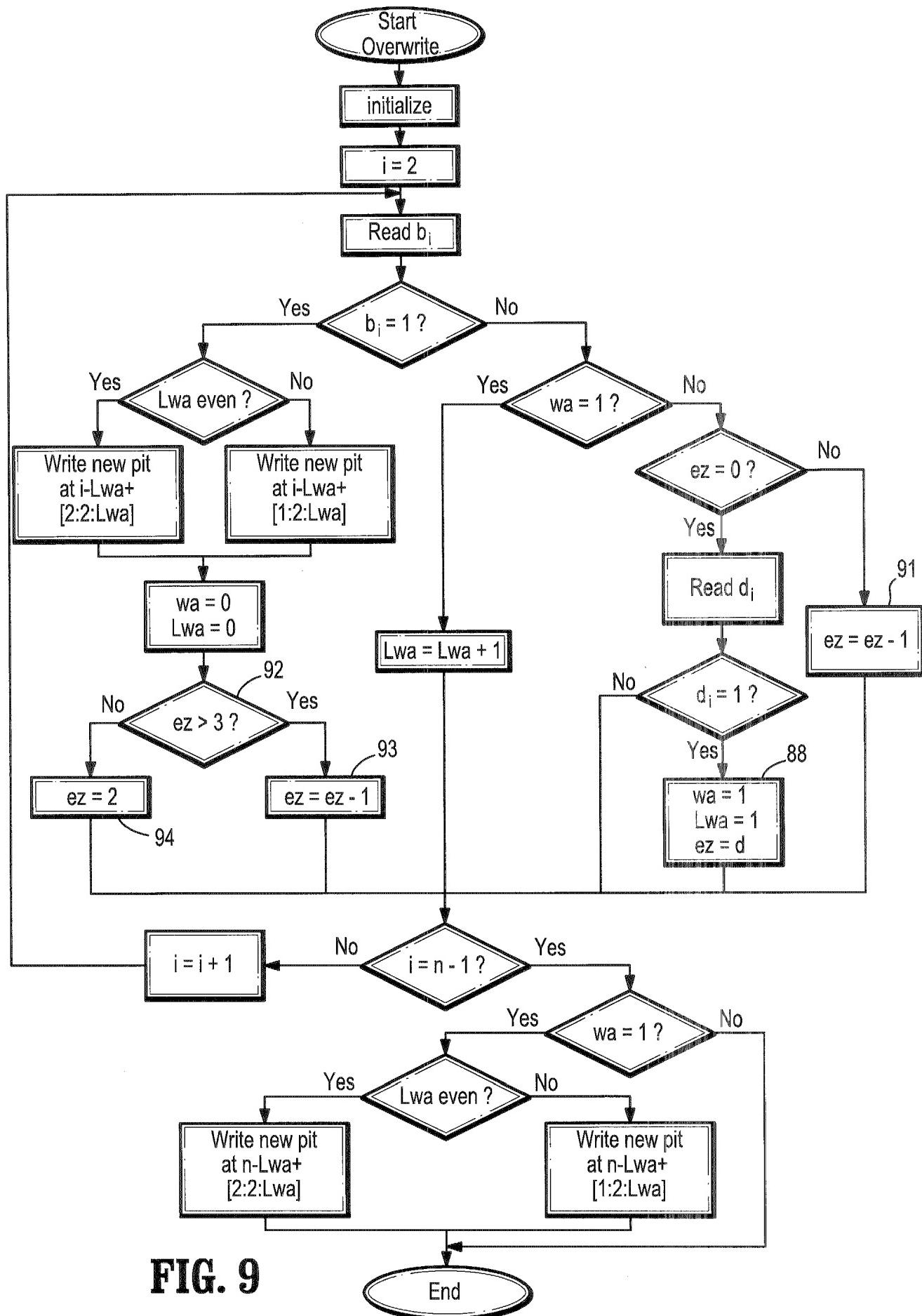
i=1: 0 1 0 0 0 0 0 0 0 1 0 0 0 0 1 0 0 1  
 i=3: 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 1  
 i=5: 0 0 0 0 0 1 0 0 1 0 0 0 0 1 0 0 1  
 i=9: 0 0 0 0 0 1 0 0 0 0 1 0 0 0 1 0 0 1  
 i=12: 0 0 0 0 0 1 0 0 0 0 1 0 0 0 1 0 0 1  
 i=16: 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1

**FIG. 8**

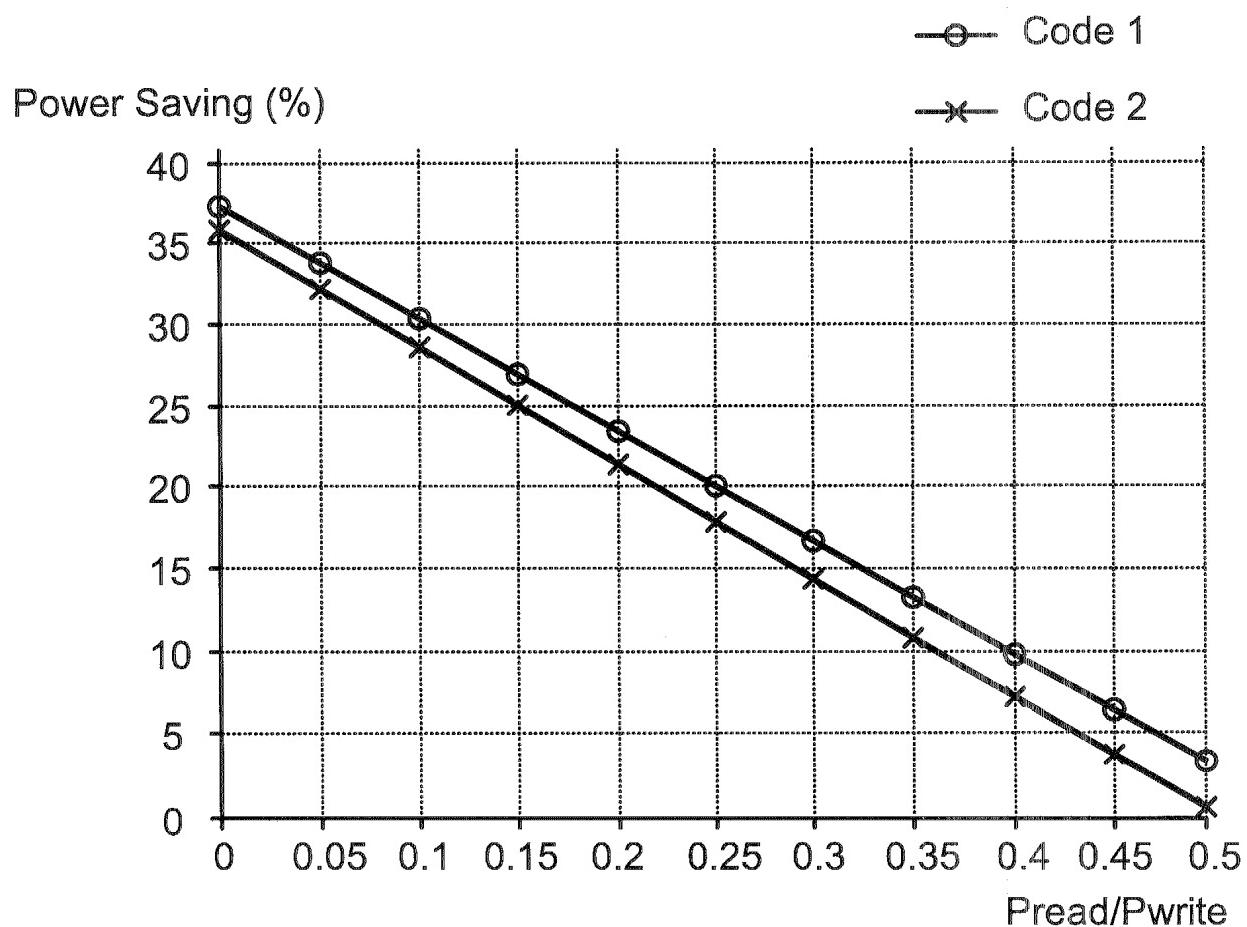
↔ write areas  
(wa = 1)

Bit Positions i:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Old data d <sub>i</sub> :	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	
Coded data b <sub>i</sub> :	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	
reads:	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	
writes:	-	W	-	W	-	W	-	-	-	W	-	-	W	-	-	-	W

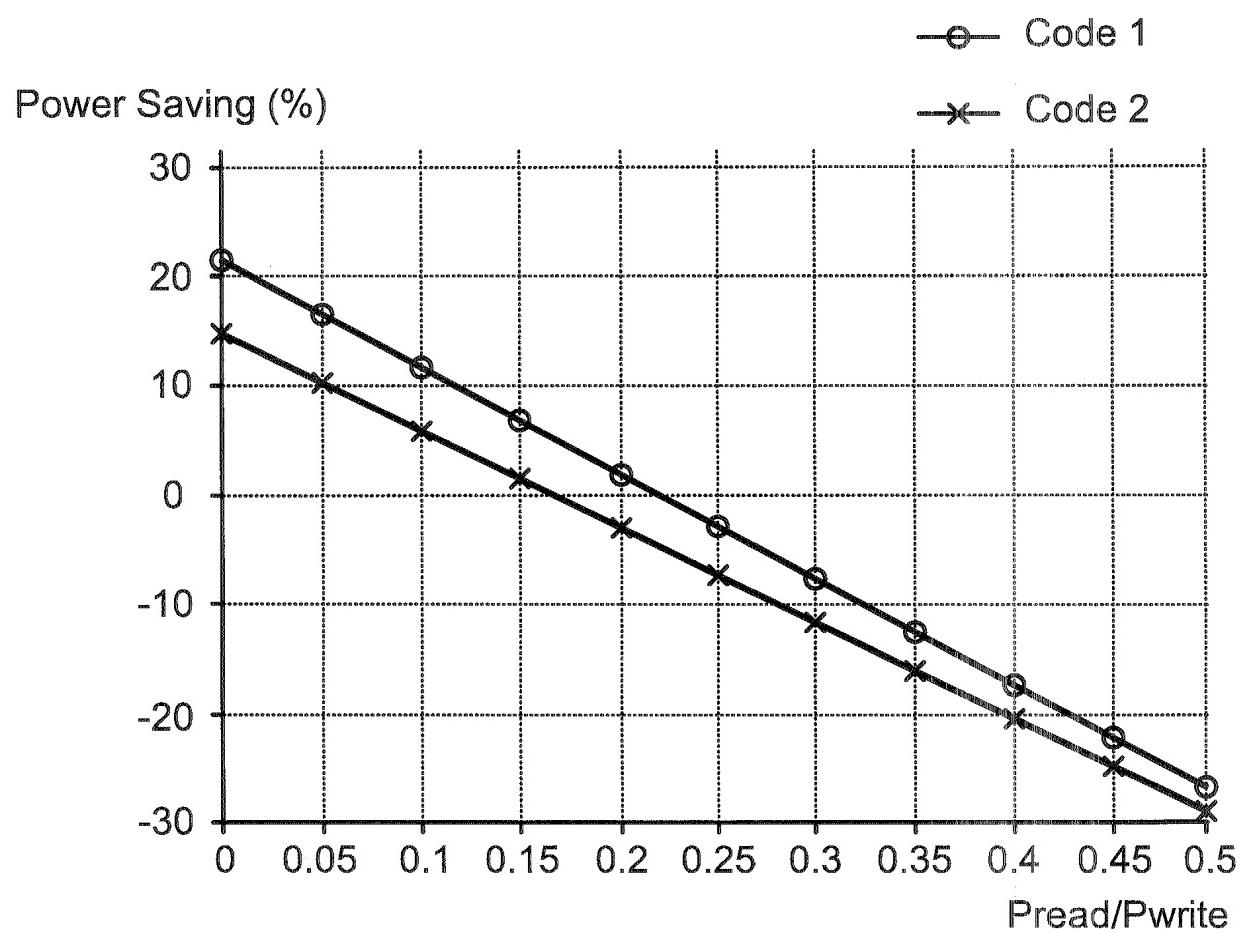
**FIG. 10**



Code:	(1, 3)	(2, 10) code 1	(2, 10) code 2
$N_w$	0.41	0.38	0.37
$N_r$	0.22	0.42	0.41
$N_{\text{method2}}$	0.44	0.61	0.57
$N_{\text{code}}$	0.37	0.2	0.22

**FIG. 11****FIG. 12**

Code:	(2, 10) code 1	(2, 10) code 2
$N_{w2}$	0.24	0.25
$N_{r2}$	0.29	0.26
$N_{method3}$	0.3	0.29
$N_{code}$	0.2	0.22

**FIG. 13****FIG. 14**